

LIPCHENKO, V.D.; SLESAREVA, T.A.; SHURSHIKOVA, P.A.; SHUL'MAN, D.I.;
SMIRNOV, Ye.V.; KONOVALOVA, N.A.; PEN'KOV, Ye., red.; LEBEDEV,
A., tekhn.red.

[Collection of exercises in calculating industrial production
costs] Sbornik uprashnenii po kal'kulirovaniu sebestoimosti
promyshlennoi produktsii. Moskva, Gosfinizdat, 1959. 207 p.
(MIRA 12:11)

(Costs, Industrial)

AKIMOV, N.I.; VOLKOV, S.P.; KONOVALOVA, N.A.; OSINOVSKAYA, R.I.; PLISKO, Yu.Yu.; SEVEROV, M.M.; STEPANOV, L.A.; SHCHUKIN, V.Ya.; VORONICHEV, M.P., red.; TSARENKO, A.P., red.; VERINA, G.P., tekhn.red.

[International railroad transportation] Mezhdunarodnye shelesno-dorozhnye soobshchenia. Pod red. M.P.Voronicheva. Moskva, Gos. transp.zhel-dor.izd-vo, 1959. 242 p. (MIRA 13:2)
(Railroads)

KONOVALOV, G.I., inzh.; KONOVALOVA, N.A., inzh.

Expansion of railroad transportation in the German Democratic Republic. Zhel.dor.transp. 42 no.4:89-92 Ap '60.
(MIRA 13:7)

(Germany, East--Railroads)

KONOVALOVA, N.A.

Diagnostic significance of disorders of the reductive capacity of the
blood serum in malignant neoplasms. Lab.delo 5 no.4:27-29 J1-Ag '59.
(MIRA 12:12)

1. Is laboratorii 1-y Novocherkasskoy gorodskoy bol'nitsy (glavnyy
vrach M.S. Kalyushnaya).
(SERUM) (CANCER)

KONOVALOVA, N.A., inzh.

Uniform international transportation nomenclature for freight.
Zhel.-dor.transp. 43 no.9:82-85 S '61. (MIRA 14:8)
(Railroads--Freight)

KONOVALOVA, N.G.; NAUMOVA, Ye.K.; RZHEVSKAYA, G.F.; TIMEYEVA, S.M.

Bactericidal effect of organophosphorus preparations and antibiotics on staphylococci of the genitals. Nauch. trudy Kaz. gos. med. inst. 14:207-208 '64. (MIRA 18:9)

1. Kafedra mikrobiologii (zav. - dotsent Z.Kh.Karimova)
i kafedra farmakologii (zav. - dotsent T.V.Raspopova)
Kazanskogo meditsinskogo instituta.

KONKOVALOVA, N. I.

1492 Nekotoryye voprosy obrabotki tocheniyem sloistykh plasticheskikh mass. Sverdlovsk, 1954 16 s 22 sm (M- Vo vyssh. obrazovaniya SSSR. Ural'skiy politekhn in-t im. S. M. Kirova) 100 ekz. F. ts- (54-54171)

SO: Knizhaya Letopis', Vol. 1, 1955

KONOVALOVA, N. I.

"Some Questions in the Processing of Laminated Plastics by Grinding." Cand
Tech Sci, Ural Polytechnic Inst imeni S. M. Kirov, Min Higher Education USSR,
Sverdlovsk, 1954. (KL, No 1, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher
Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

KONOVALOVA, N.I.; VERBER, N.Z.

Lathe operations on "Getinaks", a laminated plastic material.
Trudy Ural.politekh.Inst. no.50:131-148 '56. (MIRA 9:11)
(Plastic materials) (Machine-shop practice)

KONOVALOVA, M.

3(4) PHASE I BOOK EXPLANATION 207/2051
Moscow, Universitet. Geograficheskii (subal'tot
Voprosy gidrologii (Problems in Hydrology) [Moscow] Izd-vo
Moskovskogo univ., 1957. 231 p. 2,400 copies printed.
Reep. Ed.: I. V. Smolyar and L. B. Kurdyumov; Tech Ed.: M. S.
Kornilov.
REMARKS: This book is intended for hydrologists and geographers.
CONTENTS: This collection of articles on the hydrology of the
USSR is dedicated to Professor Ye. V. Blinnik, Doctor of Tech-
nical Sciences. Among the topics discussed are: 1) the effect
of the temperature on flow volume, 2) the calculation of stream
runoff, 3) the speed of flow waters, 4) stream levels, 5)
spring floods, 6) suspended sediments in running streams, 7) the
effect of agricultural practices on hydrology, and others. The
discussions are accompanied by maps, graphs and tables illustrat-
ing the present or long-term hydrology of the USSR. References
accompany each article.

Card 1/6

effect of agricultural practices on hydrology, and others. The
discussions are accompanied by maps, graphs and tables illustrat-
ing the present or long-term hydrology of the USSR. References
accompany each article.

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Card 5/6

3

BEFANI, N.F., kand. tekhn. nauk; KONOVALOVA, N.I., kand. geograf. nauk

Formulas for estimating rain-water infiltration. Trudy OGMI no.15:
93-102 '58. (MIRA 12:7)

1.Odesskiy gosudarstvennyy universitet.
(Soil percolation)

KONOVALOVA, N. I

Seliger, Lake

Lake Seliger. Vop. geog., 26, 1951

9. Monthly List of Russian Accessions, Library of Congress, April ² 1953. Unclassified.

EMANUEL, N. M.; KONOVALOVA, N. P.; DRONOVA, L. M.

~~APPROVED FOR RELEASE: 06/19/2000~~ CIA-RDP86-00513R000824330007-

Kinetic characteristics of the antitumoral activity of chemical compounds of various classes. Dokl. AN SSSR 143 no.3:737-740
M., '52. (MIRA 15:3)

1. Institut khimicheskoy fiziki AN SSSR. 2. Chlen-korrespondent AN SSSR (for Emanuel'.)
(Cytotoxic drugs)

EMANUEL', N.M.; DRONOVA, L.M.; KONOVALOVA, N.P.; MAYZUS, Z.K.;
SKIBIDA, I.P.

Antileukemic effect of 2,6-di-tert.-butyl-4-methylphenol
(ionol). Dokl. AN SSSR 152 no.2:481-484 S '63. (MIRA 16:11)

X

L 59350-65

ACCESSION NR: AP5019335

UR/0020/64/157/003/0707/0709

AUTHOR: Konovalova, N. P.; Bogdanov, G. N.; Miller, V. B.; Neyman, M. V.;
Rozantsev, E. G.

14
B

TITLE: Antitumor activity of stable free radicals

SOURCE: AN SSSR. Doklady, v. 157, no. 3, 1964, 707-709

TOPIC TAGS: biochemistry, neoplasm

ABSTRACT: The antitumor activity of free radicals was studied in the light of literature data indicating that a vital role in the mechanism of the antitumor action of inhibitors of radical processes is played by the action of comparatively stable free radicals formed from the inhibitors. Stable free radicals of a number of 4-substituted 2,2,6,6-tetramethylpiperidine oxides were investigated by a kinetic method of determining antitumor effectiveness. The kinetics of the changes in the weight of the spleen, number of leukocytes and hemocytoplasts per cubic millimeter of blood and percent content of hemocytoplasts in the bone marrow were studied in mice of the C57DL line with grafted leukemia from the La strain. Antileukemic activity was discovered in three free radicals; the

Card 1/2

L 59350-65

ACCESSION NR: AF5019335

antileukemic activity of one of the preparations was found to be due to the presence in its molecule of both an unpaired electron and of a urethan group.

Orig. art. has: 4 graphs, 1 table.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, Academy of Sciences SSSR)

SUBMITTED: 19Mar63

ENCL: 00

SUB CODE: LS, GC

NR REF SOV: 005

OTHER: 003

JPRS

Card

2/2

EMANUEL', N.M.; KONOVALOVA, N.P.; BOGDANOV, G.N.; VASIL'YEVA, L.S.

Kinetics of the development of ascitic leukemia L-1210. Dokl.
AN SSSR 160 no.6:1421-1423 F '65.

(MIRA 18:2)

1. Institut khimicheskoy fiziki AN SSSR. 2. Chlen-korrespondent
AN SSSR (for Emanuel').

PANICH, R.M.; KONOVALOVA, N.V.; GONSOVSKAYA, T.B.; SANDOMIRSKIY, D.M.;
VOYUTSKIY, S.S.

Properties of latexes prepared with the aid of nonionic
stabilizers. Part 2: Butadiene-styrene latexes. Koll. zhur.
27 no.4:589-592 J1-Ag '65. (MIRA 18:12)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni
M.V. Lomonosova. Submitted March 7, 1964.

KONOVALOVA, N. Ye.

"Agrobiological Basis for the Elimination of Sclerotinia of Sunflowers."
Cand Agr Sci, All-Union Sci Res Inst of Plant Protection; All-Union Order of Lenin
Academy of Agricultural Sciences imeni V. I. Leningrad, 1955. (KL, No 11, Mar 55)

So: Sum. No. 670, 29 Sep 55 - Survey of Scientific and Technical Dissertations
Defended at USSR Higher Educational Institutions (15)

RAYBININ, A.A.; KONOVALOVA, N.Ye.

Some syntheses based on glycyrrhetic acid. Zhur.ob.khim.
32 no.2:644-646 F '62. (MIRA 15:2)

1. Leningradskiy gosudarstvennyy universitet.
(Glycyrrhetic acid)

KONOVALOVA, N.Z., kand. sel'skokhozyaystvennykh nauk.

Effect of bacterial fertilizers on increasing yield and on
decreasing infection of sunflowers by sclerotinia. Zemledelie
7 no.2:89 F '59. (MIRA 12:3)
(Sunflowers--Diseases and pests) (Fertilizers and manures)

KONOVALOVA, O. A.

"Effect of High Pressure on the Autolysis of Tissues."

Sub 24 May 51, Acad Med Sci USSR.

Dissertations presented for science and engineering degrees
in Moscow during 1951.

SO: Sum. No. 480, 9 May 55

KONOVALOVA, O.A.; POLTEVA, Yu.K.

Using a pectin enriched diet in children with protracted and
chronic forms of dysentery. *Pediatrics* no.8:32-34 Aug '57.
(DYSENTERY) (PECTIN) (MIRA 10:12)

KONOVALOVA O.A. (Moskva)

Pectins and their use in therapeutic diets; review of literature
[with summary in English]. Vop.pit. 16 no.2:3-9 Mr-Apr '57.

(MLRA 10:10)

1. Iz otdela pishchevoy tekhnologii (zav. - kandidat tekhnicheskikh
nauk S.M.Bessonov) Instituta pitaniya AMN SSSR, Moskva.

(PECTINS

use in med. diets, review (Rus))

USSR/Pharmacology and Toxicology. Miscellaneous Preparations.

V

Abs Jour: Ref Zhur-Biol., No 19, 1958, 89977.

Author : Konovalova, O.A.; Poltiyeva, Yu. K.

Inst : -

Title : On the Problem of Pectin Administration in the Treatment of Dysentery.

Orig Pub: Vopr. pitaniya, 1958, 17, No 2, 47-50.

Abstract: Pectin was administered to 14 children suffering from dysentery of long duration and chronic course, in doses of 5 g three times daily (in combination with a diet). A favorable effect was obtained in the majority of cases. This drug is recommended as a supplemental means in the therapy of dysentery.

Card : 1/1

*Dept. Food Technology + Dept. Food
Children's Nutrition, Inst. Nutrition
AMS USSR*

KONOVALOVA, O.A.; BESSONOV, S.M.

Composition of protopectine in certain vegetables. Vop.pit. 18
no.5:71-75 S-O '59. (MIRA 13:1)

1. Iz Otdela pishchevoy tekhnologii (zav. - kand.tekhn.nauk S.M.
Bessonov) Instituta pitaniya AMN SSSR, Moskva.
(PECTINS chem.)
(VEGETABLES chem.)

KONOVALOVA, O.A.; KUBAYEVA, I.B.

Influence of pectin on some biochemical processes in the large intestine. Vop.pit. 19 no.1:49-54 Ja-F '60. (MIRA 13:5)

1. Iz oddela pishchevoy tekhnologii (zav. - kand.tekhn.nauk S.M. Bessonov) i iz laboratorii fiziologii pishchevareniya (zav. - prof. G.K. Shlygin) Instituta pitaniya AMN SSR, Moskva.
(INTESTINES pharmacol.)
(PECTIN pharmacol.)

KONOVALOVA, O.A.

Pectase and polygalacturonase in some vegetables and fruits.
Vop. pit. 20 no.4:48-52 J1-Ag '61. (MIRA 14:7)

1. Iz otdela pishchevoy tekhnologii (zav. - kandidat tekhn.nauk
'S.M.Bessonov [deceased]) Instituta pitaniya AMN SSSR, Moskva.
(VEGETABLES) (FRUIT) (ENZYMES)

KONNOVALOVA, O.N.

KASHINA, L.P.; KONOVALOVA, O.N.

A valuable pamphlet ("Organization of work of textile quality controllers in cotton finishing." reviewed by L.P.Kashina, O.N.Konovalova). Tekst.prom. 14 no.10:54 0 '54. (MIRA 7:10)

1. Nachal'nik otдела tekhnicheskogo kontrolya fabriki "Krasnaya Talka" (for Kashina).
 2. Zaveduyushchiy tekhnicheskoy bibliote-koy. (for Konovalova).
- (Cotton finishing)

EMANUEL', N.M.; DRONOVA, L.M.; GAGARINA, A.B.; KONOVALOVA, N.P.

Critical phenomena in transplantable leucosis. Dokl. AN SSSR 155
no.1:220-223 Mr '64. (MIRA 17:4)

1. Institut khimicheskoy fiziki AN SSSR. 2. Chlen-korrespondent
AN SSSR (for Emanuel').

17

ca

Purifying cephalin. M-A. Konovalova. Russ 81,020. July 27, 1920. A soln. of a unit of crude cephalin is added gradually to a soln. of NH_3 and ether under agitation. The cephalin is then crystallized out from ether by usual methods.

A18-51A METALLURGICAL LITERATURE CLASSIFICATION

B

a-4

Alkaloids from Lonchitis caeruleum. A. P. Ousinnov and B. A. Komarova (Khim. Farm. Prom., 1968, 30, 371—375). Distillates of *L. caeruleum* (alkaloids 0.4%) contain: Scutellariae, C₁₅H₁₃N₂ (hydrochloride); *Scutellariae*; chlorophyllin; pectate), and luteolin, m.p. 128—130°. CH. Abstr.

A.S.T.M. METALLURGICAL LITERATURE CLASSIFICATION

10

Ca

Alkaloids of species of *Senecio*. R. A. Kononova.
Bull. Acad. Sci. U. R. S. S., Chem. nat. sci., Ser. Bot. 1936, 901-6 (in French 906-7).--The hydrolysis of platyphylline (cf. C. A. 30, 6744⁷) yields the amino alc., platyphylline (I), $C_{14}H_{19}NO_4$, and platyphyllinic acid, $C_{14}H_{17}NO_4$. I contains 2 OH groups in the γ - or δ -position and forms a di-Ha deriv., $C_{14}H_{19}N(OH)_2$, and a alkylamide (II), $C_{14}H_{19}NCl$. Elimination of H_2O from I leads to an oxide, $C_{14}H_{17}NO$. Its Hofmann degradation it has been established that the N atom is situated at the intersection of the 2 heterocyclic nuclei. Reduction of II gives heptan-2-amine, $C_7H_{17}N$, previously obtained from the alkaloids *hottentuin*, *basocarpine* and *trichodesmine* obtained from the *Bauhinia* and thus establishing a connection between these alkaloids and those of the species *Senecio*. C. R. A.

ALSO SEE METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
PROCESSES AND PROPERTIES INDEX																			
<p>BC</p> <p>Hormone and hormone series. I. N-Alkyl derivatives of hormone and hormone. R. A. KOROVALOVA and A. P. OUSKOV (J. Gen. Chem. Russ., 1955, 3, 487-498).—2-N-Methylbenzylidene-hormone (I), m.p. 192-193°, and EtI in PhMe-PbNO₂ yield the ethide, m.p. 229-231°, of (I), not attacked by boiling 10% aq. NaOH or 25% aq. NH₃. 2-N-Ethylbenzylidene-hormone, m.p. 195-200°, and MeI, under analogous conditions, yield a methide, m.p. 251-252°. 2-N-Methylhormone and EtI afford an ethide, m.p. 262-263°, not identical with the methide, m.p. 262°, of 2-N-ethylhormone, m.p. 221-222°. 2-N-Ethylhormone, m.p. 163-164° [from hormone ethide, m.p. 232-233° (decomp.)], and MeI in MeOH yield a methide, m.p. 241-243°, identical with that obtained from 2-N-methylhormone and EtI in EtOH. The results are in accordance with the views of Fickin and Robinson (J.C.S., 1919, 125, 3481; 1926, 228, 687) on the structure of hormone and hormone.</p> <p>R. T.</p> <p>2-3</p>																			
<p>ASH-ILA METALLURGICAL LITERATURE CLASSIFICATION</p>																			

KONOWALOWA, R. A.

"Recherches dans le domaine du garminé et du garmaline. Communication II". Konowalowa, R. A.,
Proskournina, N. P. et Orekhov, A. P. (p. 1256)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1936, Vol. 6, No. 9

Alkaloids of: (A) *Conoclinium panicum*-*thebriens*. A. P. OSHENOV and R. A. KOSYAROVA.
(B) *Arenaria densa*. (C) *Cystis rubra*.
A. P. OSHENOV and S. S. NOSHINA. (D) *Oxycoccus rubrohaemorrhoidalis*. S. S. NOSHINA and A. P. OSHENOV.
(E) *Gentiana tinctoria*. S. S. NOSHINA, T. MARKUSHEV, and A. P. OSHENOV (*J. Gen. Chem. Educ.*, 1957, 7, 648-653, 673-675, 743-744, 853-854, 908-910).—(A) Four new alkaloids, *conocline* (I), $C_{11}H_{17}O_4N$, m.p. 115° (nitrate, m.p. 212-214°), *conoclimine* (II), $C_{11}H_{17}O_4N$, m.p. 114-116° (hydrochloride, m.p. 237-238°; picrate, m.p. 268-269° (decomp.); *platinochloride*, m.p. 316-317°; *corkchloride*, m.p. 302-303°; *methiodide*, m.p. 278-279°), *convolviline* (III), $C_{11}H_{17}O_4N_2$ or $C_{11}H_{17}O_4N_2$, m.p. 192-193°, and *convolvines* (IV), $C_{11}H_{17}O_4N_2$, b.p. 280-280° (picrate, m.p. 280-282°), have been isolated from Central Asiatic specimens of the plant. When hydrolyzed with 10% KOH in MeOH (I) yields nortropine and veratric acid (V), and is identical with veratroylnortropine. (II) is the *N*-Me derivative of (I), and is synthesized from tropine and veratroyl chloride in PhMe (at the b.p.). (II) gives (V) and an unidentified NH_2 -alcohol, m.p. 272-273°, when hydrolysed. (IV) is present in traces only, and no information as to its structure was obtained.
(b) *Dodonaea* (A., 1935, 634, identical with von Euler's gramine, A., 1935, 741) [picrate, m.p. 144-145°; perchlorate, m.p. 183°; *platinochloride*, m.p. 180-181° (decomp.); *methiodide*, m.p. 176-177°] yields skatole when distilled from Zn; von Euler's results are thus confirmed.
(c) *d*-Lupanine (VI), pachycarpine, and an alkaloid, m.p. 120-121°, not identical with cytisine (VII) or methyleytisine (VIII) have been found in extracts of the plant.
(d) The plant contains 0.16% of alkaloids, consisting of (VI), with traces of l-sparteine (IX) when the material is collected in May, and of (VI) 70%, and (IX) 30% in October.
(e) The plant contains 0.33% (dry wt.) of alkaloids, of which anagryrine, (VII), (VIII), and an unknown alkaloid, m.p. 95-96° (picrate, m.p. 244-246°), were isolated.
R. T.

KONOWALOWA, R. A.

"Sur les alcalorides des coquelicots sauvages. I. Alcaloides du Papaver orientale et Papaver armeniacum." R. A. Konowalowa, S. Jounoussow et A. P. Orekhov. (p. 1791)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii). 1937, Volume 7, No. 12.

KONOWALOWA, R. A.

"Sur les alcaloides des connelicots sauvages. II. Alcaloides de Papaver floribundum."
R. A. Konowalowa, S. Jounoussow et A. P. Orekhov. (p. 1797)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii). 1937, Volume 7, No. 12.

Senecio alkaloids. Alkaloids of Senecio platyphyllus.
 R. A. Kuznetsov, A. P. (Dekhtov and V. Tidelcl. *J. Gen. Chem.* (U.S.S.R.) 8, 273 87 (in English 287) (1958); cf. C. A. 52, 2580. The mixt. of alkaloids obtained by C_2H_5Cl extn. of *Senecio platyphyllus* consists chiefly of seneciophylline, $C_{11}H_{19}NO_3$ (I), and platyphylline, $C_{11}H_{19}NO_3$ (II), and a small amt. of other alkaloids. I and II can be sepd. because of the greater soly. of II in EtOH. Both I and II contain 1 OH group, a tertiary N atom and an unsatd. bond, and neither has a MeO or a MeN group. I darkens when heated rapidly at 205° and m. 217-18°, $[\alpha]_D^{20} -128.04^\circ$; perchlorate, darkens about 220° and carbonizes about 245°; picrate, m. 182-3°; chloraurate, m. 162-3° (decompn.); chloroplatinate, darkens about 205° and carbonizes about 246°; methiodide, m. 231-2° (decompn.). II m. 124-5°, $[\alpha]_D^{20} -45.00^\circ$; perchlorate, darkens 210° and m. 222-3° (decompn.); picriclonate, m. 205-6°; chloraurate, m. 200-1° (decompn.); methiodide, m. 216-17°. When II is hydrolyzed by alc. KOH, it gives platynecic acid (III), $C_{11}H_{17}O_4$, m. 154-5°, $[\alpha]_D^{20} 37.9^\circ$, and platynecine (IV), $C_{11}H_{17}NO$, (C. A. 29, 7088). *chloraurate* m. 200-10° (decompn.). A mixed m. p. of III and senecionic acid shows that these compds. are not the same. Besides its monobenzoate (V), IV also forms a *dibenzoate* (VI) when it is heated with $BzCl$ in pyridine. VI is an oil whose *HCl salt* m. 228-30°. When IV is hydrogenated over Pt or Pd, it is unchanged, and when it is heated with strong H_2SO_4 , it forms anhydroplatynecine (VII), $C_{11}H_{15}ON$, $d_4^{20} 1.0013$, which probably contains a cyclic oxide linkage. VII is also formed by electrolytic reduction of IV. Attempts to dehydrate V fail, since P_2O_5 has no action and H_2SO_4

gives VII. V reacts with $SOCl_2$ to give *monochloro-platynecine benzoate* (VIII), m. 73-4°; *picrate*, m. 185-6°; *HCl salt*, m. 203-4°; *III salt*, m. 176-7°; *picriclonate*, m. 198-0°. However, Zn or Mg in acid soln. have no effect on VIII, and Na and EtOH sapon. it to VII. When IV is treated with freshly prepd. $SOCl_2$ it gives mostly VII, but also 10-15% of *platynecine dichloride* (IX), IX, m. 63-4°; *HCl salt*, m. 186-7°; *picrate*, m. 205-6°. When IX is treated with Na and EtOH, the Cl atoms are removed, and subsequent catalytic reduction of the product gives a satd. base $C_{11}H_{19}N$, b. 160-71°; *picrate*, m. 237-8° (decompn.); *picriclonate*, m. 152-3°; *chloraurate*, m. 190-200°. This base is identical with heliotrine obtained from heliotrine, lasiocarpine and tritridane obtained from heliotrine, lasiocarpine and tritridane. This shows the close relation between the alkaloids of *Senecio* and Boraginaceae. H. M. L.

KONCOVALOVA R. A.

"Etude des alcaloides du senecion. Communication IV." R. A. Konovalova et
A. P. Orechov. (p. 395)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1958, Vol. 28, No. 5

KOROVALOVA, R. A.

"Etude des alcaloïdes des especes du senecio. Communication V." R. A. Korovalova
et A. P. Orechov. (p. 401)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1938, Vol. 8, No. 5

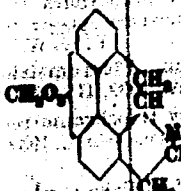
Derivatives of convolvine and convulsamine and their anesthetic properties M. S. Rabinovich, R. A. Konova
I. Ya. N. P. Ustakhsya, J. Gen. Chem., (U.S.S.R.)
lova and N. B. Ustakhsya, J. Gen. Chem., C. A. 27, 4803; 29,
677 (1954, 1955). Cf. Dzhirkhov, et al., and convulsamine
(1957). Studies of the convolvine (I) and convulsamine
(II) alkaloids are continued by prepng. 18 new derivatives, and
(II) alkaloids are continued by prepng. Nortropane (III), n-
testing their pharmacological action. Nortropane (III), m-
testing their pharmacological action. Nortropane (III), m-
testing their pharmacological action. Nortropane (III), m-
testing their pharmacological action. Nortropane (III), m-

monotropine, in 224.4% (Me₂CO) + alk⁺. This when s-
 reduced in 7% AcOH with Fe filings at 60° gave the
 corresponding amine, in 201.2% (AcOH). *HeI* salt, in
 200.4% (decomp.). N-β-Hydroxy-α-methyltropidine (VIII),
 m. 140.1°; precip. in 42% yield from 5 g. V and 11.6
 ml. CHCl₃ contg. 2.5 g. (CH₃)₂CO as above; its benz-
 zoate, m. 187.8°. p-Nitrobenzenesulphate of VIII, m. 103.2°;
 precip. in 81% yield from 2.7 g. VIII and 1.2 g. p-ONsCl;
 COCl in 15 ml. CHCl₃ (*HeI* salt, in 260.10% parate, m.
 122.5°), when reduced with Fe in 10% AcOH gave the
 amine, in 160.5%. *HeI* salt, in 200.7%. parate, in 120
 1°. The reaction of 0.0 g. V and 0.8 g. α-H₂C(H₂SO₃)
 I⁺ in PhMe as above afforded N-β-hydroxy-α-methyltropi-
 dine, parate, in 153.4%. Condensation of 1.2 g. VIII
 with 0.9 g. PhNCO in Fe₂O₃ and neutralization with alk.
HeI gave the phenylcarbamate form, in 182.4% of Rohrer,
 (C.A., 24, 2088). p-Nitrobenzenesulphate, m. 135.6°, ob-
 tained in 65.7% yield from 6 g. IV and 14 g. p-ONsCl;
 COCl in PhMe, when reduced with Fe in AcOH gave 81%
 p-aminobenzenesulphate (IX), m. 149.50°; *HeI* salt does not
 melt 250°; monoparate, m. 230°; diparate, in 144.5°;
HeI salt, m. 171.2°. PhH·COOH salt, m. 141.5°;
 AcOH salt, m. 171.2°. With 4 ml. of retd. Ac₂O for 5 h. in s-
 ethoxy 1 g. IX with 4 ml. of retd. Ac₂O and re-crystg.
 adding 4.5 ml. of cold H₂O and 25% NaOH and re-crystg.
 the vacuum-dried ppt. from AcOH + EtOH (re-crystg.
 0.5 g. acetylmethylbenzenesulphate, in 151.2°. *HeI* salt,
 does not melt 250°; PhH·COOH salt, m. 141.2°;
 pseudotropine (X), in 109.10% of Willstätter, Ber. 29,

with (1000) reacts with $\text{p-ClNC}_6\text{H}_4\text{COCl}$ in PhMe to give *nitrobenzyl pseudotropine*, *m.* 126°-7°. This on reduction formed the *amine*, *m.* 103-5°, whose $\text{PhCH}_2\text{CO}_2\text{H}$ salt, *m.* 110-12°, and HCl salt (b.p. 78-80°) in an oil 1 g. IV with 1.5 g. PhCH_2COCl (b.p. 78-80°) in an oil bath at 120-5° for 4.5 hrs., dissolving the ppt. in 4-6 ml. with H_2O , washing with Et_2O , sarg. with K_2CO_3 and extg. with Et_2O yielded *tropine phenylacetate*; HCl salt, *m.* 198-200°. *Tropine phenylurethane*, *m.* 107-8° (prepd. from IV and PhNCO in Et_2O as above); HCl salt does not *m.* 270°. $\text{p-ClNC}_6\text{H}_4\text{COCl}$ (XI), *m.* 103-4°, with 35 g. SOCl_2 at 0° yield by stirring 10 g. of the acid with 35 ml. of dry Et_2O . Condensation 2 hrs. and pptg. with 50 ml. PhMe at 130-40° for about of dry IV with 10 g. XI in 50 ml. PhMe at 130-40° with 3 hrs. and neutralization of the ppt. in a little H_2O with 25% NaOH afforded 10 g. of *butylaminobenzoate* of *tropine*, *m.* 83-90° (Et_2O); HCl salt, does not *m.* 270°. In a similar manner was obtained *butylaminobenzoate* of *pseudotropine*, *m.* 109-11°; HCl salt, does not *m.* 270°. With XI in CHCl_3 , treated as above, and pptd. with VII, formed *butylaminobenzoate* of *N-(4-hydroxyethyl)-tropidine*, *m.* 65-8°; HCl salt, *m.* 140-51°. The anaesthetic potency (duration) and toxicity (tested on white mice) of the HCl and $\text{PhCH}_2\text{CO}_2\text{H}$ salts of the prepd. salts in various concns. are tabulated and discussed in compals. to their chem. constitution. Nearly all of these relation to their chem. constitution. Nearly all of these compounds are capable of producing local anesthesia of varying degree and duration. The attachment of radicals to the N in the I mol. (II, VI, VII) reduces its toxic and anesthetic potency. The introduction of NH_2 groups into the N residue (e.g., IX) increases both the anesthetic and toxic action. Acetylation of the NH_2 group reduces the toxicity and anesthetic effect. The compounds with a free OH

group (VI) and those without an ester group are practically nontoxic and have no anesthetic action. The introduction of the phenylurethane group lowers the toxicity, while that of the phenylurethane group into the NH₂ group increases considerably the anesthetic and toxic effects. The X₁ derivatives are less toxic than the corresponding IV derivatives, but are equal in their anesthetic potency. The salts formed with PhCH₂COOH produce greater anesthetic action than with PhCH₂COONa. The introduction of a double bond (V) in the moiety of I reduces both the toxicity and anesthetic effect. Tentative clinical tests in the ophtalmic practice showed that some of these products can be used instead of cocaine and related compounds. I, II, and VII produced prolonged anesthesia but caused hypertemia and lachrymation. The investigation is being continued.

Chas. Blawie

1ST AND 2ND ORDERS		3RD AND 4TH ORDERS	
PROCESSING AND PROPERTY NOTES			
BC		A-3	
<p>Alkaloids of <i>Roemeria refracta</i>, D.C. III. Alkaloids of plants of the Papaveraceae family. R. A. Kozlovskaya, S. Juresov, and A. P. Ozerkov (Z. Gen. Chem. Russ. 1939, 9, 1336-1364).—The plant contains Lephedrine, d-ephedrine, and roemerine, $C_{15}H_{21}O_2N$, m.p. 101-102.5° (hydro- chloride, m.p. 262-263°; picrate, m.p. 195-196°), the methiodide, m.p. 215-216°, of which gives (by the Hofmann degradation) de-N-methyloemerine, m.p. 73-74°; the methiodide, m.p. 274-275°, of this, heated with KOH-EtOH, gives a product, $C_{15}H_{19}O_2$, m.p. 86-87°. This is oxidized ($KMnO_4$) to an acid, $C_{15}H_{19}O_4$, m.p. 264°, which, when heated with $Co-Ox.O_2$, yields CO_2 and a methylphenanthrene- anthrene, m.p. 84-85° (picrate, m.p. 167-168°; Br_2-deriv- ative, m.p. 196-197°). Roemerine (annexed struc- ture) yield phenanthrene when distilled with Zn dust. R. T.</p>			
			
ASB-51A METALLURGICAL LITERATURE CLASSIFICATION			
FROM SYNDICATE		FROM BOWLING	
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100000 02		111111 000 101	

Alkaloids of papaveraceous plants. IV. Alkaloids of *Roomeria refracta* D. C. Constitution of remerine and synthesis of 2,3-methylenedioxyphenanthrene. R. A. Konovalova, S. Yunusov and A. P. Orekhov. *Bull. soc. chim.* 6, 1479-85; *J. Gen. Chem.* (U. S. S. R.) 9, 1507-11 (1939); cf. C. A. 33, 6323.—Hofmann degradation of remerine (I) led to the formation of a methylenedioxyphenanthrene (II) of unknown constitution. The synthesis of 2,3-methylenedioxyphenanthrene (III) was undertaken from 6-nitroperonal (IV). A mixt. of 20 g. IV (dried at 65-70° and 12 mm.), 16.5 g. of dry PhCH_3 , $\text{C}_6\text{H}_5\text{Na}$, and 100 cc. of Ac_2O was heated at 100° for 24 hrs., *dist. in vacuo*, *dild.* with 200 cc. H_2O and extd. with 700 cc. ether. The ext. was shaken out with 400 cc. of 10% NaOH , acidulated with 30% HCl and extd. with ether, yielding 73% (26 g.) of *o*-phenyl-6-nitro-3,4-methylenedioxybenzoic acid, $\text{C}_{16}\text{H}_{11}\text{NO}_6$, m. 199-200°, reduced by NH_4FeSO_4 to the corresponding 6-amino deriv. (V), m. 207-8°. V (17.4 g.) in 1 l. of 70% alc. was diazotized at 0° by addn. of 200 cc. of 10% H_2SO_4 and 6 g. NaNO_2 in 25 cc. H_2O . After stirring for 30 min. at room temp., 35 g. of Cu powder was added. The mixt. was stirred for 2 hrs., filtered the next day, concd. *in vacuo*, crystd. out and extd. with AcOEt , producing 13.4 g. of long, fine needles of 2,3-methylenedioxyphenanthrene-3-carboxylic acid (VI), $\text{C}_{15}\text{H}_9\text{O}_4$, m. 235-6°. A mixt. of 1 g. VI and 3 g. of Cu chromite catalyst in 10 cc. quinoline was boiled for 1 hr. until the evolution of CO_2 ceased completely. The cooled mixt. was *dild.* with 150 cc. ether and filtered. The filtrate and washings were washed with 10% HCl , 6% NaOH and H_2O . Concn. and recrystl. from alc. gave 0.7 g. of colorless tablets of III, $\text{C}_{15}\text{H}_9\text{O}_4$.

n. 99-100° (mixed m. p. with II, 50°); *para*, m. 119-50°; *di-Br* deriv., m. 224-5°. The *CH*₂ group was hydrolyzed by heating 3 g. III with 8 g. phenylglucosyl and 40 cc. HCl (d. 1.18) in sealed tubes for 5 hrs. at 140-50°. The product was dild. with 40 cc. H₂O, alkalinized with 25% NH₄OH and extd. with ether. The cleavage product was methylated by CH₃N₃ in ether (from 17 g. MeN(NO)CO₂Et) and crystd. from alc., yielding 2,3-dimethoxyphenanthrene, m. 130-1° (*di-Br* deriv., m. 156-60°), and establishing the structure of III. The non-identity of II and III excludes the positions 2,3 and 6,7 for the *CH*₂ group in the mol. of I and leaves open the choice between the positions 1,2, 3,4 and 5,6. The seed mother liquors (from the sepu. of the HCl salt) and from 70 kg. of *R. refracta*, were alkalinized by 40% NaOH and thoroughly extd. with petr. ether, yielding 4.2 g. of *d*-pseudoephedrine (VII), m. 118-19°, [α]_D²⁰ 55.55° (HCl salt, m. 182-3°), and 30.5 g. of an oil which, on treatment with alc. (CO₂H), gave 12.3 g. of *l*-ephedrine oxalate, m. 239-40°, yielding *l*-ephedrine (VIII), m. 34-5°; HCl salt, m. 210-17°, [α]_D²⁰ -34.4°. Further working

up of the mother liquors gave final total yields of 16.3 g. VII and 11.2 g. VIII (0.024 and 0.018% of plant wt.). VIII is widely distributed and has previously been reported from *Ephedra*, *Taxus baccata*, *Sida cordifolia*, *Catha edulis* and *Azium napellus*, of the Gnetaceae, *Taxaceae*, *Malvaceae*, *Celastraceae* and *Renouaceae*, resp. This is the 1st report of the occurrence of VIII in the Papaveraceae. C. R. Addinall

C. R. Addinall

Alkaloids of the family Papaveraceae V. Alkaloids of *Roemeria refracta*, D. C. The structure of *roemerine*, S. Yunusov, R. A. Kononova and A. P. Orskhov. *J. Gen. Chem.* (U. S. S. R.) 9, 1858 (1939); *Bull. soc. chim.* 7, 707 (1910); cf. Kononova, *et al.*, *C. A.* 34, 2632. —Previously it was shown that *roemerine* (I) is a *methylenedioxypropine* with the formula $C_{11}H_{11}N(Me)-O_2CH_2$ (C. A. 33, 6325). Of the 5 theoretically possible arrangements of the CH_2O_2 group in I the 2,4- and 6,7-positions were excluded, because the product of the Hofmann degradation of I proved to be different from the synthetic 2,4-methylenedioxyphenanthrene (cf. *loc. cit.*). Continuing the study of the I structure, it was determined that the product of the Hofmann degradation of I, named *dihydropropine* (II), m. 162.4°. II, named to form a *dihydropropine* (II), is different from apomorphine (3,4-*here norremine* (III), is different from apomorphine (3,4-II) and therefore the CH_2O_2 in I could not be in the 3,4-position. Thus the possible arrangement of the CH_2O_2 in I was reduced to the 1,2- or 5,6-position. III with $C_{11}H_{11}N$ in MeOH + Et_2O gave cryst. *dimethylnorremine* (IV), m. 165-6°, $[\alpha]_D^{20} = 115.2^\circ$. It differs from the amorphous *dimethylapomorphine* (cf. Knorr and Raabe, *C. A.* 2, 3315). Hofmann degradation of IV yielded *dimethoxy-3-*

vinylphenanthrene (V), m. 50.7°. Oxidation of V in MeOH with $KMnO_4$ gave *dimethoxyphenanthrene* (VI), m. 212.1°, converted by heating with CrO_3 catalyst in quinoline to *3,4-dimethoxyphenanthrene* (VII), m. 43.4°; *di-Bz deriv.*, m. 124.5°. *methylnorremine* (VI), m. 105-6°. It is identical with VI obtained synthetically by Pecher (Ber. 33, 1810 (1900)) and by methylation of morphine (cf. Barger, *C. A.* 12, 1450), a product of morphine. VI could be derived only from 3,4- or 5,6-II. Since III is not identical with apomorphine, it follows that the HO groups in III are in the 5,6-position and therefore I is *5,6-methylenedioxypropine*. The Hofmann dehydration of IV and its MeOH deriv. with KOH in MeOH proceeds abnormally with the liberation of some NMe₃ and formation of V and *dimethylnorremine*, a semiliquid mass, $[\alpha]_D^{20} = 115.2^\circ$. *di-N-methylnorremine*, a semiliquid mass, $[\alpha]_D^{20} = 115.2^\circ$, refluxed with KOH in MeOH yielded *MeI deriv.*, m. 278°, refluxed with KOH in MeOH yielded *MeI deriv.*, m. 278°. *Alkaloids of Glaucium ambrilligerum*. R. A. Kononova, S. Yunusov and A. P. Orskhov. *Ibid.* 1939, 10. —Extn. of 0 kg. of dry, powd. *G. ambrilligerum* (gathered in summer in Tashkent) with CH_2Cl_2 contg. a little NH_4OH gave 47 g. (0.77%) of mixed alkaloids, contg. *NH_4OH*, *corydine*, *allocorydine*, *chelerydrine* and *protopine*. The 1st 3 alkaloids are present in the green parts of the plant and the remaining 2 alkaloids in the roots. The usual methods of isolation and identification of the alkaloids are described in detail. 20 references.


Chas. Blane

KONOVALOVA, P8A8

600

1. KONOVALOVA, R. A., YUNUSOV, S., OREKHOV, A. P.
2. USSR (600)

"On Alkaloids of Plants of the Family Papaveraceae. VI. The Alkaloids of the Glaucium Gimbrilligerum", Zhur. Obshch. Khim., 9, No. 21, 1939. Alkaloid Dept. All-Union Sci.-Res. Chemico-Pharmaceutical Inst. imeni S. Ordzhonikidze. Received 4 Jun 1939.

9.  Report U-1626, 11 Jan 1952.

PROCESSING AND PROPERTIES INDEX																									
1ST AND 2ND CROSSL													3RD AND 4TH CROSSL												
<p>Alkaloids of <i>Fritillaria sewerzowii</i>. S. Yunusov, R. A. Konovalyova and A. P. Orekhov. <i>J. Gen. Chem.</i> (U. S. S. R.) 9, 1911-14 (1939).—Extn. with C_2H_5Cl of 100 g. of dry, powdered tubers of <i>Fritillaria sewerzowii</i> (<i>Koradonema sewerzowii</i>), family Liliaceae (gathered in August in Central Asia) gave 925 g. (9.25%) of crude base which by a complex process of reworking yielded a new alkaloid, named <i>alpinine</i>, $C_{14}H_{19}NO_3$, m. 271-2°, $[\alpha]_D^{20} 108.5^\circ$; <i>HCl</i> salt, m. 328-3°; <i>MeI</i> deriv., m. 310-11°. It contains 3 OH groups with a tertiary N and probably has the formula $C_{14}H_{19}(N)(OH)_3$. The investigation is being continued. Chav. Blanc</p>																									
<p>ASD SIA METALLURGICAL LITERATURE CLASSIFICATION</p>																									

KONOVALOVA, R. A., OREKHOV, A. P.

"On the Alkaloids Aconitum Talassicum--I. On the Alkaloid Forms Aconitum" Khur.
Obshch. Khim. 10 No. 8, 1940, Alkaloid Dept. All-Union Chemico-Pharmaceutical Inst.
Imeni S. Ordzhonikidze, Received 25, Oct. 1939.

Report U-1627, 11 Jan. 52

Alkaloids of the family Papaveraceae. VII. Alkaloids of *Papaver armeniacum*. The structure of *armepavine*. S. Yunusov, R. A. Konovalova and A. P. Orekhov. *J. Gen. Chem.* (U. S. S. R.) 10, 641-8 (1940); cf. *C. A.* 34, 4072¹⁴.—*Armepavine* (I), previously isolated from *Papaver armeniacum* and *Papaver floribundum* (*C. A.* 30, 1380⁴), yields on methylation with CH_3N_3 in MeOH and ether methyl-I (II), m. 63-4°, $\alpha_D^{20} -84.48^\circ$ (in CHCl_3), the methiodide (III) of which m. 135-6°. II on boiling with Ac_2O followed by energetic oxidation with HNO_3 (d. 1.4) gives anisic acid. Heating of III with KOH and MeOH gives inactive *des-O,N*-dimethylarmepavine (IV), m. 86-7°; IV-HCl, m. 229-30°; IV-Mel (V), m. 233-4°. On heating V with KOH and MeOH, Me_2N is split off with the formation of a compd. $\text{C}_{15}\text{H}_{19}\text{O}_5$ (VI), m. 79-9.5°. Oxidation of VI by means of KMnO_4 in acetone yields anisic acid and 4,5-dimethoxyphthalic acid. This shows that VI is 4,5,4'-trimethoxy-2-vinylstilbene and II is 6,7-dimethoxy-1-(4-methoxybenzyl)-2-methyl-1,2,3,4-tetrahydroisoquinoline. Ethylation of I with Et_2SO and NaOH gives *diethyl-des-armepavine* [dimethoxyethoxy-2-(β -ethylmethylaminoethyl)stilbene] as a thick oil, which on

oxidation with KMnO_4 in acetone yields *p*-ethoxybenzoic acid. This result proves that I is 6,7-dimethoxy-1-(4-hydroxybenzyl)-1-methyl-1,2,3,4-tetrahydroisoquinoline which conclusion is further substantiated by the oxidation of I with KMnO_4 in acetone whereby 6,7-dimethoxy-1-keto-2-methyl-1,2,3,4-tetrahydroisoquinoline, m. 124-5°, is obtained. Gertrude Herend

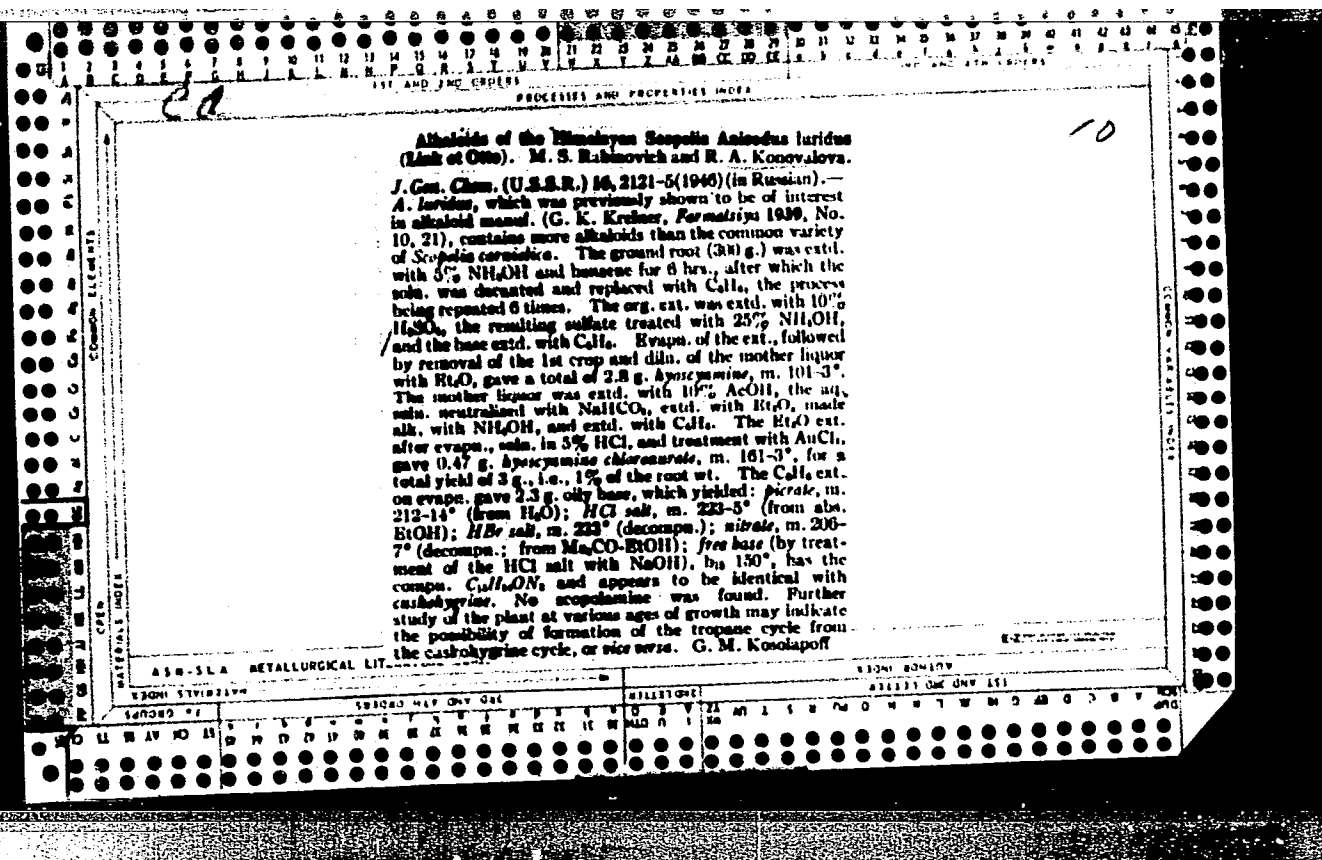
COMMON ELEMENTS																										COMMON VARIABLES																									
1ST AND 2ND COLUMNS													3RD AND 4TH COLUMNS																																						
<p style="text-align: center;">PROCESSES AND PROPERTIES INDEX</p> <div style="display: flex; justify-content: space-between;"> BC P-3 </div> <p>Dolichone alkaloids. I. Dolichone from Dolichopus sp. M. I. Kuznetsov and E. A. Kuznetsova (J. Gen. Chem. Russ., 1961, 31, 281-282). Dolichone sp. has yielded a new alkaloid, dolichone, $C_{24}H_{32}O_4$, which is probably related to certain aconite alkaloids; its structure indicates the partial structure, $C_{24}H_{32}O_4$ (Mol. Wt. 384). A table is included which gives a summary of all the known facts about dolichone alkaloids and literature references.</p> <p>Dolichone (I), m.p. 135-136°C, (α) +30.0°, is sparingly sol. in Et₂O, CHCl₃, EtOAc, and H₂O, easily sol. in EtOH, and very sol. in CH₃CO₂H; it gives a crystalline salt, $C_{24}H_{32}O_4 \cdot HCl$, m.p. 140-141°C, (α) +37.0°, easily sol. in H₂O, less sol. in EtOH, and easily sol. in H₂O, HNO₃, m.p. ~160° (decomp.). (α) +30.4°, very easily sol. in H₂O, less sol. in EtOAc. With MeI it gives a methiodide, $C_{24}H_{32}O_4 \cdot MeI$, m.p. ~150° (decomp.), easily sol. in H₂O and EtOH. (I) is converted by heating EtOH-KOH; with KHSO₄, oxidation gives MeCHO; acetylation under normal conditions gives an acetylated mixture but Ac_2O-C_2H_5Mg gives a Δ^2 derivative (I) $C_{24}H_{32}O_4$, m.p. 116-117°C, (α) +30.0°, very easily sol. in EtOH and other dry solvents except light petroleum. (I) is obtained from the dried plant by extraction with CH_2Cl_2, a mixture of 5% w/v. The solution is shaken with dil. H₂SO₄, the acid solution added alkaline with NH₃, and the total alkaloids (1% of original dry wt.) extracted with CHCl₃. After evaporation the residue is treated with COMe, in which (I) is insol. During the evaporation, 0.33% of the original wt. Pure (I) is obtained from the purified mixture via the tartrate and the pyridine salt.</p> <p style="text-align: right;">G. S. S.</p>																																																			
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1ST AND 2ND COLUMNS										140 AND 4TH COLUMNS									
PROCESSES AND PROPERTIES INDEX																			
<div style="display: flex; justify-content: space-between;"> CA 17 </div> <p>Separation of platyphylline from seneciophylline. R. A. Konovalova. U.S.S.R. 65,706, Jan. 31, 1940. Platyphylline is pptd. from a mixt. with seneciophylline by heating with an alc. soln. of tartaric acid. M. Hosh</p>																			
<div style="display: flex; justify-content: space-between;"> ASAC-55A METALLURGICAL LITERATURE CLASSIFICATION 8-27-40-12-11 </div>																			
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1ST AND 2ND GROUPS		PROCESSES AND PROPERTIES INDEX		3RD AND 4TH GROUPS	
CA		<p><i>p</i>-Aminobenzoic tropine tartrate. R. A. Kononova and M. S. Rabinovich. U.S.S.R. 65,877, Feb. 28, 1940. The reaction product of tropine and <i>p</i>-nitrobenzoic chloride is reduced to the corresponding amino deriv. An alc. soln. of the latter is mixed with an alc. soln. of tartaric acid and the pptd. tartrate is sepd. out. This salt, referred to as Conivocaline, is suitable as a local anesthetic and as a vasoconstrictor.</p> <p>M. Hosh</p>		17	
450.11A METALLURGICAL LITERATURE CLASSIFICATION					
1ST GROUP		2ND GROUP		3RD GROUP	
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	

1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
PROCESSES AND PROPERTIES INDEX																			
<p>CA</p> <p>Separation of anabesine from its aqueous solution. R. A. Kozlovskaya and M. S. Rabinovich. U.S.S.R. 66,247; May-81; 1946. Aq. ext. of <i>Anabasis aphylla</i>.</p> <p>is made alk. and treated with activated clay. The mixt. is filtered and the clay is treated with dil. H_2SO_4. From its acid soln. anabesine or its salt is recovered by known means. The adsorbent is regenerated by treatment with steam. M. Hosh</p> <p>17</p>																			
<p>ASB-LLA METALLURGICAL LITERATURE CLASSIFICATION</p>																			
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<p>Preparation of cytoline from an aqueous extract of the seeds of <i>Thermopsis lanceolata</i>. N. A. Kuvshinov and A. A. Kuvshinova. U.S.S.R. 60,504, Aug. 31, 1947. The seeds are extd. with H_2O and the ext. is treated with adsorbent, e.g., activated clay or silica gel. The alkaloids are desorbed with a soln. of NH_3 in $CHCl_3$. $CHCl_3$ is driven off next, and in the thus obtained cryst. mixt., cytoline is isolated with Me_2CO. M. Hosh</p>																																																																																																							
ASB-114 METALLURGICAL LITERATURE CLASSIFICATION																																																																																																							
<table border="1"> <thead> <tr> <th colspan="10">FROM DIVISION</th> <th colspan="10">SECTION</th> <th colspan="6">SUBSECTION</th> </tr> <tr> <th colspan="10">SUBSECTION</th> <th colspan="10">SUBSECTION</th> <th colspan="6">SUBSECTION</th> </tr> </thead> <tbody> <tr> <td colspan="10"></td> <td colspan="10"></td> <td colspan="6"></td> </tr> </tbody> </table>																										FROM DIVISION										SECTION										SUBSECTION						SUBSECTION										SUBSECTION										SUBSECTION																															
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CA

Platyphylline. R. A. Kononova. U.S.S.R. 60,001.
Dec. 31, 1947. *Senecio platyphyllous* contains platyphylline, seneciophylline, and genplatyphylline. To increase the yield of platyphylline from the plant material, an acid-aq. soln. of the combined alkaloids is treated with Zn dust or other reducing agents, followed by alkalization of the soln. and purification by the usual means. M. Hosh

KONOVALOVA, R. A.

PROCESSES AND PROPERTIES INDEX

Alkaloids of wild species of the poppy. VIII. Alkaloids of *Papaver bracteatum*. V. V. Kiselev and R. A. Konovalova. *J. Gen. Chem. (U.S.S.R.)* 18, 142-60 (1948) (in Russian); cf. *C.A.* 34, 7917. —From *P. bracteatum* were isolated 4 phenolic bases: *isothebaine*, *oripavine*, *bractamine*, $C_{17}H_{17}N$, $C_{17}H_{17}NO$, and *bractamine*, $C_{17}H_{17}N$, $C_{17}H_{17}NO$. An dried superterranean parts of the plant (5 kg.) were extracted by 12% NH_4OH and extd. with $CHCl_3$ (ext. A). The $CHCl_3$ extd. by 5% H_2SO_4 , and the latter neutralized to weak Congo red reaction with 40% $NaOH$, then made alk. with concd. NH_4OH and extd. with Et_2O (ext. A) and $CHCl_3$ (ext. B). Ext. A was concd. to 500 ml., treated twice with 25 ml. 10% $NaOH$ (alk. ext. C) and 25 ml. H_2O , the aq. soln. added to the alk. soln., and the Et_2O distd., giving a total of 1.75 g. *isothebaine*. The alk. ext. C with excess NH_4Cl gave a white ppt., most of which dissolved in Et_2O (ext. D), and the residue was dissolved in $CHCl_3$ (ext. E). Evapn. of ext. D gave 2.1 g. oily resin, which solidified on grinding, and on crystn. from hot $EtOH$ gave 0.3 g. *isothebaine*, m. 199°, while the mother liquor gave, on crystn. from $EtOH$, 0.15 g. *oripavine*, decomp. 195-6°. Evapn. of the solvent from ext. E gave 1.9 g. resin, which with 3 ml. 10% HCl and 7 ml. H_2O gave 0.3 g. colorless solid F, while the acid soln. was washed with $CHCl_3$ (ext. G), made alk. with NH_4OH , and extd. with Et_2O , the latter giving 0.01 g. crude *oripavine*, m. 201°. Ext. G on evapn. gave 0.1 g. *isothebaine*, m. 196-8°, while solid F, was ground with

SEE-512 METALLURGICAL LITERATURE CLASSIFICATION

REGIONAL SYMBOL

SECOND

ENGLISH MAP. GNY. GAC

SYMBOLIC

LIST

SYMBOLIC

H_2O , acids, H_2O , difficultly sol. in petr. ether, sol. in hot

KONOVALOVA, R. A.

PA 8/49T58

USSR/Chemistry - Alkaloids, in Plants
Chemistry - Opium Alkaloids

May 48

"Alkaloids in the Plants of the Papaveraceae Family,
IX," R. A. Konvalova, V. V. Kiselov, Alkaloidal
Sec, Inst of Phar, Toxicol and Chemotherapy, 4 pp

"Zhur Obshch Khim" Vol XVIII (LXXX), No 5, p. 855

Devoted to oripavine. When it is methylated with
diazomethane, thebaine is produced. When it is
heated with dilute hydrochloric acid, a new phenol
base, similar to thebaine, is obtained. Consti-
tutional formulas included. Submitted 25 Oct 1946.

8/49T58

KONOVALOVA, R.

Konovalova, P. and Danilova, A., Investigation of alkaloides of the type sepecio.
VI. About the structure of seneciphyllin. p. 1198
Zhur. Obshchei Khimii, 1948, Vol. 18, No. 6.

Seneci-phyllin adds 4 atoms of hydrogen during catalytic hydrogenation and gives an amino acid - seneciphyllin ether of retro necanole. Seneciphyllin is a cyclic di ether of retro necine with a molecule of di basic seneci-phyllinic acid.

The Alkaloid Dept. of the Ordzhonikidze All Union Scientific Research Chemo-
Pharmaceutical Institute . Moscow
April 21, 1947

KONOVALOVA, R. A.

Rabinovich, M. S. and Konovalova, P. A., On alkaloids from *Dipsacus Azureus* Schrenk.
p. 1510.

From *dipsacus azureus* is evolved a crystalline alkaloid of composition $C_{10}H_9O_2N$
of a non-saturated character containing a lactonic grouping. Dehydroderivative $C_{10}H_{11}O_2N$
is obtained and during oxydation $C_9H_7O_4N$ acid is evolved.

The Orzhonikidze All Union Sci. Res.
Chemico-Pharmaceutical Inst. Lab.
of Chemistry of Alkaloids, Moscow.
April 12, 1947

SO: Journal of General Chemistry (USSR) 18, (80) No. '8 (1948)

KONOVALOVA, F. A.

Rabinovich, M. S. and Konovalova, F. A., On alkaloids from "Ipsacus Azureus Schrenk.
p. 1510.

From dipsacus azureus is evolved a crystalline alkaloid of composition $C_{10}H_9O_2N$
of a non-saturated character containing a lactonic grouping. Dehydroderivative $C_{10}H_{11}O_2N$
is obtained and during oxydation $C_9H_7O_4N$ acid is evolved.

The Orzhonikidze All Union Sci. Res.
Chemico-Pharmaceutical Inst. Lab.
of Chemistry of Alkaloids, Moscow.
April 12, 1947

SO: Journal of General Chemistry (USSR) 18, (80) No. '8 (1948)

Aconite alkaloids. IV. Delartine. M. S. Kabanovskiy
 and R. A. Kononova. *Zhur. Obshchei Khim.* (J. Gen.
 Chem.) 19, 1387-95 (1949); cf. *C.A.* 34, 5158f; 37, 2718f.
 —Extn. of 10 kg. *Delphinium* sp. (from Kyz-art in Trans-
 shen region) with CH_2Cl_2 and 5% NH_4OH and the usual
 treatment with dil. H_2SO_4 , followed by extn. of the crude
 alkaloids with Et_2O , then with CHCl_3 , gave 11 g. alk-
 aloids from the Et_2O ext. and 11 g. from the CHCl_3 ext.
 The former could not be crystd., but addn. of NaClO_4
 soln. to its soln. in 5% HCl gave a viscous perchlorate,
 which after rubbing with EtOH and H_2O gave pure *delar-*
tine perchlorate, needles, m. 188-90° (from dil. EtOH),
 contg. 1.511% O ; the *free alkaloid*, m. 110-30° (from Et_2O),
 [α]_D 15.1° (EtOH), has the compn. $\text{C}_{14}\text{H}_{17}\text{N}_3$ (?), and is
 amorphous. Boiling with 10% alc. KOH gave the *amino*
alc., $\text{C}_{14}\text{H}_{17}\text{N}_3$, glassy solid, m. 142-5° (from C_6H_6),
 forms a *monohydrate*, needles, m. 110-15° (from dil.
 EtOH), [α]_D 16.3°; its *HBr salt*, needles, m. 167-9°
 (decompn.) when anhyd., or m. 89-91° (before vacuum
 drying to const. wt.); the *HCl salt*, powder, decomp. 80°
 (from abs. $\text{EtOH-Et}_2\text{O}$), or m. 159-62° when dried to
 const. wt.; *perchlorate*, m. 87-90° (from $\text{EtOH-Et}_2\text{O}$);
HI salt, decomp. 174-6° (from $\text{Me}_2\text{CO-EtOH}$), after
 drying at 120°. Heating to 100° in a sealed tube with
 MeI-MeOH yields merely the *HI salt* of the amino alc.
 Oxidation of the amino alc. with $\text{KMnO}_4\text{-H}_2\text{SO}_4$ gave AcH ,
 while reduction over Pt does not take place. The aq.
 filtrate after the isolation of the amino alc. gave on acidi-
 fication by HCl *delartine acid*, m. 100-4° (decompn.; from
 $\text{Et}_2\text{O-EtOAc}$), which on hydrolysis with 10% HCl gave
 anthranilic acid and a new acid, m. 170-2° (after subli-
 mation *in vacuo*), which is not identified. The behavior
 of the amino alc. from delartine suggests its identity with
 the *licetamine* of Schulze and Bierling (*C.A.* 7, 2652).
 The CHCl_3 ext. of the alkaloid mass upon soln. in 5%
 HCl , washing with org. solvents, and reprecip. and reextn.
 with Et_2O and CHCl_3 , gave *delphamine*, m. 105-8°
 (from $\text{EtOH-Et}_2\text{O}$); *tartrate*, m. 157-61° (from EtOH);
chloranilate, m. 171-2° (decompn.). The properties of
 delphamine suggest its identity with Goodson's "alkaloid
 C" (*C.A.* 39, 3293). G. M. Kosolapoff

KONOVALOVA, R. A.

58/49715

USER/Chemistry - Alkaloids
Chemistry - Isothebaine

Jan 49

"Alkaloid Plants of the Papaveraceae Family: I,
Structure of Isothebaine," V. V. Kiselev, R. A.
Konovalova, Alkaloid Dept, Inst of Pharmacol,
Toxicol, and Chemotherapy, 8 3/4 pp

"Zhur Obshch Khim" Vol XIX, No 1

Conclusions: (1) Methylating of isothebaine by
dimethylsulfate occurs under conditions set forth by
Pahor and Karo. (2) First stage of Hoffmann
degradation occurs abnormally through splitting
off of trimethylamine. Previous explanations for

58/49715

USER/Chemistry - Alkaloids (Contd)

Jan 49

the arrangement of substituents in isothebaine were
shown incorrect. Presence of a phenanthrene
nucleus in isothebaine was confirmed by extraction
of mellophanic acid. Submitted 9 Dec 46.

58/49715

CA

17

Adsorption method of isolation of anabasine. M. S. Rubinsovich and R. A. Kornevalova (S. Ordzhonikidze Chem. Pharm. Inst., Moscow). *Zher. Priklad. Khim.* (J. Applied Chem.) 23, 995-1001(1949).—Anabasine can be adsorbed from aq. media by numerous adsorbents, affording a sepn. from numerous materials that accompany the alkaloid in aq. exts. of *Anabasis aphylla*. The most active substances are silica gel, infusorial earth, gumbrin (Caucasian), and mikhi-Asiatic bentonite; kaolin is almost ineffective as is permutit. For removal of 80-85% of the base at least 15-20% (by wt.) bentonite is necessary; best results occur at pH 9. Temp. effect is slight (4-20° range) in 40-5-min. treatment. Desorption is best done by treatment with dil. H_2SO_4 . Desorption with 2N H_2SO_4 can desorb 84% of which after 3 cycles with 2N H_2SO_4 can desorb 84% of the base giving solns. contg. up to 6% of the alkaloid; the solns. acquire addnl. purification in this step, showing a considerable loss of color. Org. solvents are thus completely eliminated. Steam treatment with 40% NaOH gives 100% desorption but the solns. are extremely dil. (0.25-0.3%), as are exts. with steam and acid solns. The acid method of desorption is satisfactory at 2:1 ratio of the aq. acid to the amt. of the adsorbent. G. M. Kozlov

1951

KONOVALOVA, R. A.

PA 32/15758

USSR/Medicine - Gentianin
Medicine - Chemistry, Physical

May 49

"Gentiana Kirilowi Alkaloids," M. F. Proskurnina, V. V. Shpanov, R.A. Konovalova,
All-Union Sci Res Physicophar Inst imeni S. Ordzhonikidze, 2 pp

"Dok Ak Nauk SSSR" Vol LXVI, No 3

Structural formula of gentianin was established by oxidation with permanganate, entailing formation of isonicotinic acid. It was found to contain a vinyl group. Because of its structure it differs from well-known alkaloids of related substances. Submitted by Acad A. N. Nesmeyanov, 14 Mar 49.

C A

10

Alkaloids of *Senecio* species. VII. Alkaloids from *Senecio renardi*. A. V. Danilova and R. A. Konovalova (S. G. Khimichesk. All-Union Chem. Pharm. Inst., Moscow; *Zhur. Obshch. Khim.* (J. Gen. Chem.) 20, 1021 (1950); *C. A.* 32, 5409; 43, 1427g. Extn. of *S. renardi* leaves with (CHCl₃) in the presence of 10% NH₄OH gave upon extn. of the crude products with Et₂O and evapn. a mixt. of alkaloids; extn. with hot Me₂CO left behind *seneciphylline*, m. 212-14° (*picrolonate*, m. 176-7°), while cooling the ext. gave *renardine*, C₁₇H₂₁O₅N, m. 192-3° (from EtOH), [α]_D²⁰ -2.23° (CHCl₃); *picrate*, m. 219-20° (from EtOH); *hydroxide*, m. 107-7.8° (from EtOH); *methoxide*, decomp. 194-5°. Concn. of the Me₂CO mother liquid gave a small amt. of a base, m. 170-8° (from Me₂CO), whose constitution is unknown. Hydrolysis of renardine for 0.5 hr. with hot 0.5 N aq. NaOH gave an *acid*, m. 148-9°, which on heating with 10% HCl forms a *ketone*, m. 154-5°, identical with *senecionic acid*; the other cleavage product is an *amino al.* which could not be adequately identified. Renardine has a methylimide group and gives a pos. pyrrole test. Extn. of the residue of the alkaloids, after the initial Et₂O extn., with CHCl₃ and re-extn. with Me₂CO gives more renardine and insol. *othosanine*, C₁₇H₂₁O₅N, m. 218-10°, [α]_D²⁰ 14.3° (CHCl₃); *picrate*, decomp. 211-2°; this base heated 0.5 hr. with 3% aq. NaOH yields a tarry amino al. and *senecionic acid*, m. 180-1°. Othosanine was obtained for identification by extn. from roots of *S. othoniae* with (CHCl₃) in the presence of NH₄OH. G. M. Konovaloff.

CA

70

Structure of platynecinic and seneciolic acids. A. V. Dandova and R. A. Konyakova (S. Ordzhonikidze All-Union Chem.-Pharm. Inst., Moscow). *Doklady Akad. Nauk S.S.S.R.* 73, 315-17 (1950).—Alc. alk. hydrolysis of platyphylline yields an unsatd. acid, $C_{12}H_{18}O_4$, m. 151-2°, identical with the seneciolic acid (I) from the hydrolysis of senecioline (C.A. 31, 4855); an aq. medium in the hydrolysis yields, however, a more sol. acid, having same compn. but m. 133-5°, named *platynecinic acid* (II). On heating with 10% HCl, both acids yield a *lactonic acid* (III), $C_{12}H_{18}O_4$, m. 155-6°, $[\alpha]_D^{20}$ 43°, mere heating above the m.p.

with alkali yields only I. Both acids take up 2 H, yielding a *dihydro deriv.*, which heated with 10% HCl gives the corresponding *lactone*, m. 133-4°, identical with the reduction product from III. Hence, II appears to be a *cis* and I a *trans* isomer of same structure. Bromination of III in $CHCl_3$ gave the *di-Brom deriv.*, m. 162-3°, $[\alpha]_D^{20}$ -64.8°, while in an aq. medium it gave a *mono-Brom deriv.*, m. 113-13.5°.

$[\alpha]_D^{20}$ -6.5°, probably by loss of HBr from the initial dibromide. Oxidation with $KMnO_4$ in Me_2CO and with HNO_3 gave $AcOH$, $(CO_2H)_2$, and 2 isomers of an acid, $C_{12}H_{18}O_4$, one of which, aq. $[\alpha]_D^{20}$ 7.1°, yields a *diamide*, m. 104-5°, while the 2nd acid, m. 98-100°, $[\alpha]_D^{20}$ 30.0°, was characterized as a poorly sol. Ag salt; both have 2 acid and 1 OH groups, and do not lactonize; neither is an α -HO acid (no reaction typical of the class with PbO_2 in H_2SO_4); the pair are apparently diastereomeric α -methyl- β -hydroxyglutaric acid. Hence, the original acid pair may be represented by either of the formulas, $MeCH: C_1(O_2H)CH_2CHMeCH(OH)CH_2CO_2H$ or $MeCH: C(CO_2H)CH_2CH_2CH(OH)CHMeCO_2H$, both of which explain the above set of observations. The investigation is being continued to establish the correct formula. G. M. Kosolapoff

Chem A

10

Alkaloids of some species of the bean family. X. New alkaloids from *Piptanthus nanus* *piptantine* and *piptantine* R. A. Kimovalova, B. S. Diskina, and M. S. Rabinovich (S' Otdel' Khim. i Med. Prikl. Khim. Inst., Moscow). *Zhur. Obshchei Khim.* (J. Gen. Chem.) 21, 773-80 (1951); cf. C. 1, 27, 3478; 29, 4767. Exhaustive extn. of the upper parts of *Piptanthus nanus* with CH_2Cl_2 in the presence of 10% NH_4OH , treatment of the ext. with 10% H_2SO_4 , addn. of 25% NH_4OH to the acid ext., and extn. with Et_2O , then with CHCl_3 , gave on concn. of the CHCl_3 ext. 43 g. alkaloids (from 8.5 kg. plant) and concn. of Et_2O ext. gave 180 g. crude alkaloids. Treatment of the Et_2O extn. residue with 10% H_2SO_4 , washing with CHCl_3 , addn. of NaHCO_3 to alk. litmus reaction, and exhaustive extn. with Et_2O , then with CHCl_3 , gave on evapn. of the Et_2O ext. 56 g. crude, or 23.1 g. *piptantine* (I), m. 136-40°. Treatment of aq. soln. after Et_2O extn. (above) with 25% NH_4OH and extn. with Et_2O , evapn. of the latter, and addn. of Me_2CO gave 2.6 g. *piptantine* (II), m. 132-63°. Distn. of the residue from the above solid alkaloids gave *i*-*sparteine*, b. 143-55° (*sparteine*, m. 108-9°; *methylester*, m. 236-67°; *di-HCl* salt, m. 255-7°); a higher-boiling fraction (b. 100-210°) on treatment with Me_2CO gave addnl. amts. of II. Pure I, m. 143.5-4.5° (from Me_2CO), is obtained through the *nitrate*, m. 205-6° (from aq. KOH). I is $\text{C}_{16}\text{H}_{25}\text{N}_2\text{O}_4$, λ_{D}^{25} 24.3° (KOH); *di-HCl* salt (monohydrate),

decomp. 250°; *di-HCl* salt monohydrate, decomp. 280°. Heating I with MeI in EtOAc gives an *HI* salt, m. 238-9°, which with 25% NH_4OH yields a *N-Me* deriv. of I, m. 111-12° (from Me_2CO); *nitrate*, m. 157-8° (from EtOH). Heating I with AcO-pyridine on a steam bath gave an *N-Me* deriv. of I, m. 214-15° (from Me_2CO). I with 10% aq. NaNO_2 in dil. HCl gave a *nitroso* deriv., decomp. 95°. Pure II, m. 173-4°, has the same compn. as I, and in EtOH is optically inactive. *di-HCl* salt, decomp. 345°; *HI* salt (*di-I*), decomp. 294°; treatment with MeI in hot EtOAc, followed by NH_4OH treatment, gave an *N-Me* deriv. of II, m. 103.5-7.5° (from Me_2CO) after purification through the *nitrate*. Heating II with AcO-pyridine 6 hrs. on a steam bath gave *N-Me* deriv., decomp. 92-6° (from Me_2CO). II in dil. HCl with NaNO_2 gave a poorly stable *nitroso* deriv. which could not be recrystd. II *nitrate* is readily sol. in Me_2CO , while I *nitrate* is poorly sol., thus affording a convenient sepn. I and II contain 1 secondary N atom. Possibly I and II may be the intermediates in the biosynthesis of sparteine in the plants. G. M. Kozolapoff

1957

CA

Alkaloids of some species of the bean family. X. New
alkaloids from *Piptadenia nana* - pipatanine and pipatanine
R. A. Konovalova, B. S. Diskina, and M. S. Rabonovich
J. Chem. Soc. B, 1953, 1853 (1953) (Engl. transla-
tion) *C.A.* 48, 10548.

KONOVALOVA, R. A.

184T14

USSR/Chemistry - Atropine Substitutes

11 Jun 51

"Alkaloids of Senecio Platyphyllus (Family Compositae): On the Isolation of Two New Alkaloids, N-Oxydo-Platyphyllin and N-Oxydo-Seneciphyllin," R. A. Konovalova, All-Union Sci Res Chemicopharm Institute S. Ordzhonikidze

"Dok Ak Nauk SSSR" Vol LXXVIII, No 5, pp 905-907

Continues investigation which resulted in isolation of platyphyllin and seneciphyllin, as described earlier by author and A. P. Orekhov (1938).

184T14

USSR/Chemistry - Alkaloids

21 Dec 51

"The Constitution of the Alkaloids Piptantine and Piptamine," B. S. Distine, R. A. Konovalova, All-Union Sci Res Chem-Phar Inst Imeni S. Ordzhonikidze

"Dok Ak Nauk SSSR" Vol LXXI, No 6, pp 1069-1072

The plant Piptanthus nanus was discovered in 1931 in Soviet Russia. In 1946 it was found to be rich in alkaloids (2.5% of dry wt). Among the alkaloids discovered in it were sparteine (I), piptantine (II), and piptamine (III). A previous article ("Dok Ak Nauk SSSR" Vol LXXVIII No 4, 1951) gives the constitution of the latter 2

219713

alkaloids. The connection between I and II has been established, and the constitution of II, N-methylpiptantine, nomopiptantine, and homocorypiptantine clarified.

219713

KONOVALOVA, R.

RABINOVICH, M. S. and KONOVALOVA, R. A.

"Anesthetizing Derivatives of Convoline and Convolamine," 1952.

U-1982, 22 May 52

Chem Abs
V.48 25 Jan 54

APPROVED FOR RELEASE: 06/19/2000

Organic

Alkaloids of the plants of Papaveraceae and R. A. Konovalova (S. Orzhonikidze Akad. Union Chem. Pharm. Inst. Moscow). Zhur. Obshch. Khim. 22, 2233-6 (1952); cf. C.A. 43, 6207h. Oxidation of 3 g. isothebaine in H₂O with 21.9 g. KMnO₄ at room temp., then at 50-60° gave 1.01 g. of a substance which yielded 0.3 g. 3-methoxyphthalic anhydride, m. 161-162°. This heated with PhNH₂ in MePh gave 3-methoxyphthalic anhydride, m. 187-9°, indicating with foaming 163° on rapid heating, m. 187-9°, indicating heating; on remelting the product m. 187-9°. Oxidation of 4.35 g. formation of 3-methoxyphthalic anhydride by 21.84 g. KMnO₄. the Me ether of isothebaine methosulfate by 21.84 g. KMnO₄ in 3-4% soln., as above, gave 0.22 g. 3-methoxyphthalic anhydride and 0.68 g. product, m. 240-1°, on slow heating, decomp. 175-80°, on rapid heating, remelting at 240-1°; this substance C₁₀H₁₁O₄ is apparently 2,3,2'-trimethoxy-5,6,6'-tricarboxyphenyl. Treatment of 4 g. corydine-HCl salt with 12.8 ml. Me₂SO in 30% NaOH gave the Me ether of corydine methosulfate, m. 247-8° (from EtOH), which with aq. KI gave the methiodide of corydine, decomp., 248-9° (from EtOH). Oxidation of the methosulfate with KMnO₄ as above gave an acid, C₁₀H₁₁O₄, apparently 5,6,5',6'-tetramethoxyphenyl-2,3,3'-tricarboxylic acid, m. about 125°, with foaming and immediate resolidification and remelting at 220-30.5°; on slow heating the material shrinks at 120-5° and m. 220-30.5°; pure material on slow heating acid from isothebaine shows the locations of the HO and MeO groups in the benzene ring of aporphine skeleton (in the tetrahydroisoquinoline fraction); 1 MeO in the other benzene ring is in 1 or 4 position. In oxidation with KMnO₄ of nonphenolic aporphine alkaloid: the benzene ring in the tetrahydroisoquinoline part of the structure is less stable to oxidation in alk. medium than the other benzene ring. (G. M. Kosolapoff)

The 1st picrate, m. 124-7° (from EtOH, then from EtOAc). The alkaloid, C₁₀H₁₁ON, named indicaine; the latter picrate (m. 127-9° after purification), gave an alkaloid named indicamine, C₁₀H₁₁ON, which is an unsatd. substance. Both latter alkaloids are liquids. G. M. Kosolapoff

USSR/Chemistry - Alkaloids

Aug 53

"Investigation of Alkaloids of Senecio Species. VIII
Alkaloids from Groundsel (Senecio sarracenioides)."
A. Denilova, R. Kononova, P. Massaguetov, and
M. Garina, All-Union Sci-Res Chemicopharm Inst im
S. Ordzhonikidze

Zhur Obshch Khim, Vol 23, No 8, pp 1417-1421

Isolated two new alkaloids, sarracine $C_{18}H_{27}O_5N$ and
sarracine N-oxide $C_{18}H_{27}O_6N$, from a groundsel
(Senecio sarracenioides). Sarracine picrate and bitar-
trate were obtained as well as the picrate and
chloroaurate of sarracine N-oxide.

270132

KONOVALOVA, R.

Chemical Abstracts
May 25, 1954
Organic Chemistry

4 Alkaloids from *Senecio sarraceni*. A. V. Danilova, R. Konvalova, P. Masagotov, and M. Garina. *Doklady Akad. Nauk S.S.S.R.* 89, 885-886 (1953). The plant contains 0.8-0.9% alkaloids, which treated in the crude state with tartaric acid gives a *bitartrate*, m. 177-9°, of a base, $C_{11}H_{17}O_4N$, m. 51-2°, $[\alpha]_D^{25} - 129.7^\circ$, isomeric with platyphylline. The new alkaloid was named *sarracine*; it forms a *picrate*, m. 140-1°, contains a OH but not a methylimine grouping, decolorizes $KMnO_4$ and has an unsatd. link. The alkaloid is an ester, as on sapon. with alkali it yields an *amine* etc. and org. acids. The former, m. 151-2°, $[\alpha]_D^{25} - 57^\circ$, and yields a *picrate*, m. 181-3°, thus identifying it as *platynecine*, obtained earlier from the hydrolysis of platyphylline. If the alkaloids are extd. from the plant without preliminary moistening with NH_4OH it is possible to isolate, by extn. with $CHCl_3$, an almost neutral substance, $C_{11}H_{17}O_4N$, m. 123-4° (from Me_2CO), $[\alpha]_D^{25} - 81.6^\circ$ (*picrate*, m. 107.5-8.5°; *chloroaurate*, m. 133-5°). Reduction of this with Zn dust yields *sarracine*. This alkaloid thus appears to be an *N*-oxide of *sarracine*. This is confirmed by its formation from *sarracine* with H_2O_2 . G. M. Kosolapoff

4

10-12-64
and

OREKHOV, Aleksandr Pavlovich, akademik, 1881-1939; KONOVALOVA, R.A., doktor
khimicheskikh nauk; KONOVALOVA, A.A., kandidat khimicheskikh nauk;
RODIONOV, V.M., akademik, redaktor [deceased]; BURMISTROVA, M.S.,
redaktor; AUZAN, N.P., tekhnicheskii redaktor.

[Chemistry of alkaloids] Khimiia alkaloidov. Izd-vo 2-e, ispr. 1 dop.
Moskva, Izd-vo Akademii nauk SSSR, 1955. 859 p. (MIRA 8:4)
(Alkaloids)

KONOVALOVA, R.A.; RABINOVICH, M.S.

Academician Aleksandr Pavlovich Orekhov; on the 75th anniversary
of his birth. Khim.nauka i prom. 1 no.4:469-471 '56. (MLRA 9:11)
(OREKHOV, ALEXANDER PAVLOVICH, 1881-?)

5.3610,5.3900

77917
SOV/79-30-2-68/78

AUTHORS: Arendaruk, A. P., Proskurnina, N. F., Konovalova, R. A.

TITLE: Investigation of Alkaloids of Thesium Minkwitzianum Plants

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 2, pp 670-676 (USSR)

ABSTRACT: The overground part of Thesium Minkwitzianum, an herbaceous plant collected in 1939 in the Turkomen SSR by P. S. Massagetov, was extracted with dichloroethane. They yielded 0.7% alkaloids (based on the dry weight of the plant), consisting of 0.5% of a saturated phenolic base, $C_{34}H_{42}O_6N_2$, mp 254-256° C, which the authors named "thesin" (tezin). The remaining 0.2% alkaloids (after separation of thesin) gave a phenolic fraction, from which a second new alkaloid was isolated. Its empirical formula corresponded best to $C_{17}H_{21}O_3N$, mp 38-40° C; the authors named it "thesinin" (tezinin). Finally, the non-phenolic fraction yielded an alkaloid with an empirical formula $C_{10}H_{11}O_2N$.

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Investigation of Alkaloids of Thesium
Minkwitzianum Plants

77917
SOV/79-30-2-68/78

mp 124-125° C, which the authors named "thesinicin" (tezinitzin). The aqueous extract of the plant roots yielded a crystalline base $C_8H_{15}ON$, mp 39-40° C (identified as d-isoretronecanol), d-mannitol, succinic acid, and acid $C_4H_8O_4$. It was established that thesin is an ester of the dibasic acid $C_{18}H_{16}O_6$ (named by the authors "thesinic acid") and d-isoretronecanol and that thesinin is an ester of p-hydroxycinnamic acid and d-isoretronecanol. There are 1 table; and 4 references, 1 U.S., 1 German, 2 Soviet. The U.S. reference is: R. Adams, K. Hamlin, J. Am. Chem. Soc., 64, 2597 (1942).

ASSOCIATION: Institute of Pharmacology and Chemotherapy, Academy of Medical Sciences USSR (Institut farmakologii i khimioterapii Akademii meditsinskikh nauk SSSR)

SUBMITTED: February 4, 1959

Card 2/2

OREKHOV, Aleksandr Pavlovich, akademik, [deceased]; KABACHNIK,
M.I., akademik, otv. red.; KONOVALOVA, R.A., prof., red.;
GAL'PERN, G.D., prof., red.; SIMUKOVA, N.A., red.

[Chemistry of the alkaloids of plants of the U.S.S.R.]
Khimiia alkaloidov rastenii SSSR. Moskva, Nauka, 1965.
391 p. (MIRA 18:11)

1 8000-65 EPA(s)-2/EWT(m)/EPF(c)/EPR/EWP(j)/T Ps-L/Pr-L/Ps-L/Pt-10 RPL
 ACCESSION NR: AP4045434 RWH/WW/RM S/0190/64/006/009/1668/1675

AUTHOR: Shterenzon, A. L.; Lobanov, Yu. Ye.; Konovalova, S. F.

TITLE: Penetration of ftorlon with concentrated electrolyte solutions

SOURCE: Vy*sokomolekulyarny*ye soedineniya, v. 6, no. 9, 1964, 1668-1675

TOPIC TAGS: Ftorlon polymer, polymer film, corrosion preventing film, polymer permeability, concentrated electrolyte penetration, polymer penetration factor

ABSTRACT: Ftorlon, a copolymer of tetrafluoroethylene and vinylidene fluoride, has been evaluated as a corrosion-resisting film in very aggressive electrolyte solutions such as concentrated H_2SO_4 , H_3PO_4 , KNO_3 , KCl , HCl , HNO_3 , NH_3 , and CH_3COOH , at 42—50C. In the absence of a satisfactory explanation for the sharp differences in permeability of a given polymer with various electrolytes, an attempt was made to explain the mechanism of penetration of a chemically

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L 8922-65

ACCESSION NR: AP4045434

stable polymer. Electrical conductivity measurements made it possible to calculate the penetration factor and hence the permeability of a fluoron film. The absence of penetration of nonvolatile electrolytes, such as H_2SO_4 , H_3PO_4 , and salts, and the relatively high permeability of the film to volatile electrolytes (HCl , HNO_3), were established. This difference in permeability is explained in terms of a difference in sorption of the electrolytes on a polymer, which is determined by the work function of the electrolyte molecules from aqueous solution. The mechanism of penetration of non-swelling polymers with a low dielectric constant is similar for both electrolytes and gases and vapors, since the electrolytes are believed to be undissociated in such polymers. The near-exponential concentration dependence of the penetration factor was established with volatile electrolytes and was ascribed to the similar character of the change in electrolyte activity in aqueous solution with a change in concentration. Orig. art. has: 3 figures and 16 formulas.

Card

2/3

L 8922-65

ACCESSION NR: AP4045434

ASSOCIATION: Ural'skiy nauchno-issledovatel'skiy khimicheskiy institut, Sverdlovsk (Ural Scientific Research Institute of Chemistry)

SUBMITTED: 13Nov63

ATD PRESS: 3110

ENCL: 00

SUB CODE: MT

NO REV SOV: 017

OTHER: 010

Card 3/3

22512

S/062/61/000/004/001/008
B118/B208

15.2100

1142, 1273, 1145

AUTHORS:

Toropov, N. A., Galakhov, F. Ya., and Konovalova, S. F.

TITLE:

Silicates of rare earth elements. 2. Phase diagram of the binary system gadolinium oxide - silicon dioxide

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, no. 4, 1961, 539-543

TEXT: The lanthanum silicate $2\text{La}_2\text{O}_3 \cdot 3\text{SiO}_2$ was synthesized and described for the first time by N. A. Toropov and I. A. Bondar' (Izv. AN SSSR, Otd. khim. n., 1959, 552), and its melting range in the system $\text{La}_2\text{O}_3\text{-SiO}_2$ was determined. The structure of gadolinium oxide described by C. E. Curtis, I. R. Johnson was not confirmed by these scientists. The purpose of the present work was therefore the study of the system $\text{Gd}_2\text{O}_3\text{-SiO}_2$. The authors proceeded from a 98.2% gadolinium oxide containing 1.75% of other rare earths, and powdery rock crystal (99.90% SiO_2). The study was performed in different ways by an annealing and hardening method. The phases

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S/062/61/000/004/001/008
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Silicates of rare earth...

give $2\text{Gd}_2\text{O}_3 \cdot 3\text{SiO}_2$ and a liquid. Table 3 presents formulas and temperatures of the invariant points of the system $\text{Gd}_2\text{O}_3\text{-SiO}_2$. The oxy-orthosilicates $\text{Gd}_2\text{O}(\text{SiO}_4)$, the orthosilicates $\text{Gd}_4(\text{SiO}_4)_3$, and the pyrosilicates $\text{Gd}_2\text{Si}_2\text{O}_7$ have been synthesized and described. The authors determined the ranges of separation into layers and the respective upper-limit critical point. Fig. 2 shows roentgenograms of the compounds. There are 5 figures, 3 tables, and 5 references: 2 Soviet-bloc and 3 non-Soviet-bloc. The three references to English-language publications read as follows: F. P. Glasser, I. Warshaw, R. Roy, Amer.Ceram.Soc.Bull.38,169(1959); I. Warshaw, R. Roy, Amer.Ceram.Soc.Bull.38,169(1959); C. E. Curtis, I. R. Johnson, I.Amer.Ceram.Soc.40,15(1957).

ASSOCIATION: Institut khimii silikatov Akademii nauk SSSR (Institute of Silicate Chemistry of the Academy of Sciences USSR)

SUBMITTED: January 18, 1960

Card. 3/7

26399
S/062/61/000/008/001/010
B117/B206

15.2230

AUTHORS: Toropov, N. A., Galakhov, F. Ya., and Konovalova, S. F.

TITLE: Silicates of rare earths. Communication 5. Phase diagrams of the systems $Dy_2O_3-SiO_2$ and $Er_2O_3-SiO_2$

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 8, 1961, 1365-1371

TEXT: The authors investigated the binary systems $Dy_2O_3-SiO_2$ and $Er_2O_3-SiO_2$ according to the method explained in previous studies by N. A. Toropov et al. (Ref. 2: Izv. AN SSSR, Otd. khim. n., 1961, 559; Refs. 1, 3, 4: Izv. AN SSSR, Otd. khim. n., 1960, 153; 12v. AN SSSR, Otd. khim. n., 1961, 544; Izv. AN SSSR, Otd. khim. n., 1961, 116). The specimens were prepared from dysprosium oxide with a content of oxides of other rare earths of less than 0.6 %, from erbium oxide (99.1 %) with 0.85 % admixtures and from rock crystal powder (99.90 % SiO_2). Dysprosium oxide annealed at 1000°C has a cubical structure, refractive index of $n=1.88$ and melting point of 2210°C. After being alloyed in the electric

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S/062/61/000/008/001/010
B117/B206

Silicates of rare earths...

arc, it disintegrates into powder even at very fast cooling. After this treatment, however, the specimen contains a certain amount of a high-temperature variety. This could be ascertained when comparing the roentgenograms of a specimen annealed at 1000°C and one alloyed in the arc, as well as microscopically. The mean refractive index of the high-temperature phase is $n=1.975$. On the basis of experiments, dysprosium oxide must be classified as belonging to the group of polymorphous oxides of rare earths. This corresponds to the latest data by M. W. Shafer and R. Roy (Ref. 6; J. Amer. Ceram. Soc. 42, N 11 (1959)). Erbium oxide differs from dysprosium oxide by the fact that it does not disintegrate after being alloyed in the arc. The optical properties and roentgenograms of Er_2O_3 annealed at 1000°C and of that alloyed in the arc are identical. Presumably, Er_2O_3 only exists in cubical form in the temperature range of from 1000°C up to the melt. The refractive index is $n=1.95$, the melting point 2290°C. The phase diagram of the system $\text{Dy}_2\text{O}_3 \cdot \text{SiO}_2$ (Fig. 2) drawn up on the basis of the experimental annealing- and hardening results shows the existence of three compounds: $\text{Dy}_2\text{O}_3 \cdot \text{SiO}_2$, $2\text{Dy}_2\text{O}_3 \cdot 3\text{SiO}_2$ and $\text{Dy}_2\text{O}_3 \cdot 2\text{SiO}_2$. Compounds of similar compositions were also found in the system $\text{Er}_2\text{O}_3 \cdot \text{SiO}_2$.

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B117/B206

Silicates of rare earths...

(Fig. 3). The optical properties and density of the compounds produced are contained in Table 3 and the calculated interplanar spaces in Table 4. The oxy-orthosilicates $Dy_2O[SiO_4]$ and $Er_2O[SiO_4]$ as well as the orthosilicates $Dy_4[SiO_4]_3$ and $Er_4[SiO_4]_3$ melt without decomposition. However, the latter two are only stable in a specific temperature range. Below this range, they decompose into oxy-orthosilicates and pyrosilicates. During melting, dysprosium pyrosilicate $Dy_2[Si_2O_7]$ decomposes into orthosilicate $Dy_4[SiO_4]_3$ and liquid. A great change of the properties of silicates of rare earths was first determined in erbium pyrosilicate $Er_2[Si_2O_7]$: in contrast to silicates with a lower ordinal number (Y, La, Sm, Gd, Dy), it melts without decomposition and has a corresponding maximum on the phase diagram of $Er_2O_3-SiO_2$. Moreover, it differs from other pyrosilicates by a much higher double refraction. Composition and temperature of the eutectics between oxy-ortho- and orthosilicates of both systems and the eutectic between ortho- and pyrosilicates of the $Er_2O_3-SiO_2$ system could not be exactly ascertained, and are therefore marked on the phase diagrams

Card 3/8

TOROPOV, N.A.; GALAKHOV, F.Ya.; KONOVALOVA, S.F.

Rare earth silicates. Report No.5: Phase diagrams of the system $Dy_2O_3 - SiO_2$ and $Er_2O_3 - SiO_2$. Izv. AN SSSR. Otd. khim.nauk no.8:1365-1371 Ag²61. 2 (MIRA 14:8)

1. Institut khimii silikatov AN SSSR.
(Dysprosium oxide)
(Erbium oxide)
(Silica)

S/062/62/000/005/001/008
B110/B101

AUTHORS: Toropov, N. A., Galakhov, F. Ya., and Konovalova, S. F.

TITLE: Silicates of rare-earth elements. 9. Solid solutions between yttrium and erbium silicates

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 5, 1962, 738-743

TEXT: The systems $Y_2O_3 \cdot SiO_2$ - $Er_2O_3 \cdot SiO_2$; $2Y_2O_3 \cdot 3SiO_2$ - $2Er_2O_3 \cdot 3SiO_2$, and $Y_2O_3 \cdot 2SiO_2$ - $Er_2O_3 \cdot 2SiO_2$ were investigated. The samples were produced from the respective oxides in accordance with I. A. Bondar' (Izv. AN SSSR, Otd. khim. n. 1962, 377; ibid., 1962, 383), heated in a platinum furnace and a vacuum microfurnace, and examined by microscope and X-ray analysis. Results: (1) The phase diagrams of diortho- and orthosilicates of yttrium and erbium are similar, and large zones of solid solutions are formed in both. (2) The interruption of reciprocal solubility is a small section in the middle of a few tenths percent. According to Rozeboom, they belong to the 5th type of diagrams with solid

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Silicates of rare-earth elements. 9. ... S/062/62/000/005/001/008
B110/B101

solutions. (3) There is a small field of primary crystallization of yttrium orthosilicate due to fusion of yttrium diorthosilicate during decomposition. The roentgenograms showed: (a) Pure yttrium silicates and their solid solutions with 40% erbium silicate display monotype roentgenograms. (b) If erbium silicate $\gg 60\%$, solid solutions form on the base of it. (c) Samples with equal silicate content (50%) yield a mixture of two solid solutions. (4) There is no interruption of solubility in oxyorthosilicates ($Y_2O_3 \cdot SiO_2 - Er_2O_3 \cdot SiO_2$). The liquidus curve of the continuous series of solid solutions has a minimum shifted toward erbium oxyorthosilicate (3rd Rozeboom type). As the two elements belong to different structural sub-groups, the formation of a continuous solid solution can be explained by the low packing density of the structural elements. However, as in diortho and orthosilicate systems, the minimum also points to a tendency toward interrupting solubility. Different silicate types of the same (yttrium and erbium) rare-earth elements form diagrams of different types of solid solutions among one another. The slight difference (1.9%) of the ionic radii of yttrium and erbium, on the one hand, favors the formation of continuous solid

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solutions, but the structural difference of yttrium and erbium silicates, on the other, is an obstacle to it. As a result, different types of silicates of the same rare-earth elements form either continuous or limited solid solutions among one another. There are 4 figures and 3 tables.

ASSOCIATION: Institut khimii silikatov Akademii nauk SSSR
(Institute of Silicate Chemistry of the Academy of
Sciences USSR)

SUBMITTED: October 31, 1961

Card 3/3

TOROPOV, N.A.; GALAKHOV, F.Ya; KONOVALOVA, S.F.

Rare earth silicate elements. Report No.9: Solid
solutions formed by yttrium and erbium silicates. Izv. AN SSSR.
Otd.khim.nauk no.5:738-743 My '62. (MIRA 15:6)
(Yttrium silicates) (Erbium silicates) (Solid solutions)

L 17850-65 EWP(e)/EPA(s)-2/EWT(m)/EPF(n)-2/EPA(w)-2/T/EPA(bb)-2/EWP(b)
Pab-10/Pq-4/Pt-10/Pu-4 ASD(m)-3 WW/WH
ACCESSION NR: AP4044698 S/0062/64/000/008/1373/1377

AUTHOR: Galakhov, F. Ya.; Konovalova, S. F. B

TITLE: Liquefaction phenomena in the $Al_2O_3-SiO_2$ system Communication 1.
Experimental data and their discussion

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 8, 1964, 1373-1377

TOPIC TAGS: alumina silica system, liquefaction, heat treatment, microliquefaction,
transparent glass, opalescent glass, porcelain, x ray ionization, microhardness,
mechanical strength

ABSTRACT: The unique structures formed by heat treatment in the $Al_2O_3-SiO_2$ system were apparently caused by microliquefaction, i. e. , the formation of two liquids with very high mutual dispersion. Preliminary work indicated that a transparent glass containing 20-40% alumina became opalescent after heating at 1300C for 1 hour; heating at 1600C gave a porcelain-like material in which the individual crystals were so fine they were not visible. Hence the conditions for

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L 17850-65
ACCESSION NR: AP4044698

3

liquation in the Al_2O_3 - SiO_2 system were examined. Compositions containing 15-60 wt. % alumina were heat treated--(1) heated prior to annealing to 150-200 degrees above the annealing temperature, cooled to the holding temperature, then quenched, or (2) heated at 1600C without previous remelting or subsequent quenching. Samples were subjected to microscopic, electron microscope, x ray polarization examinations and microhardness testing. Microliquation was fixed in compositions of 20-60 wt. % Al_2O_3 after samples were annealed at temperatures above the liquidus temperature. It was believed one liquid would crystallize, catalysing crystallization of the less-readily crystallizable liquid, and then the crystallized areas would combine. Their structure and composition was similar, only their particle size differed, causing formation of coarse oval crystallized particles with fine ridges. The microhardness of these oval crystallized particles was much higher than that of the surrounding glass, e. g., 845 vs. 645 kg/mm² in a 50-50 Al_2O_3 - SiO_2 glass annealed at 1850C for 30 seconds. This increased mechanical strength indicates the possibility of obtaining pyroceramics based on mullite which would probably have greater fire resistance due to the higher fusion temperature of the mullite. Orig. art. has: 1 figure.

Card 2/3

L 17850-65
ACCESSION NR: AP4044698

ASSOCIATION: None

SUBMITTED: 24Dec62

ENCL: 00

SUB CODE: MT

NO REF SOV: 000

OTHER: 004

Card 3/3

GALAKHOV, F.Ya.: KONOVALOVA, S.F.

Liquation phenomena in silicate melts. Dokl. AN SSSR 155 no.1:
122-124 Mr '64. (MIRA 17:4)

1. Institut khimii silikatov im. I.V.Grebenshehikova AN SSSR.
Predstavleno akademikom N.N.Semenovym.

GALAKHOV, F.Ya.; KONOVALOVA, S.F.

Liquation phenomena in the system Al_2O_3 - SiO_2 . Report No 1:
Experimental data and their discussion. Izv. AN SSSR. Ser.
khim. no.8:1373-1377 Ag '64. (MIRA 17:9)

1. Institut khimii silikatov im. I.V. Grebenshchikova AN SSSR.

SHTERENZON, A.L.; LOBANOV, Yu.Ye.; KONOVALOVA, S.F.

Penetration of concentrated electrolyte solutions through ftorlon.
Vysokom.sped. 6 no.9:1668-1675 S '64. (MIRA 17:10)

1. Ural'skiy nauchno-issledovatel'skiy khimicheskiy institut, Sverd-
lovsk.

L 12053-66 EWT(1)/EPF(2)-2/ETC(2)

ACC NR: AP6001307 SOURCE CODE: UR/0363/65/001/008/1399/1402

AUTHOR: Galakhov, F. Ya.; Konovalova, S. F.

ORG: Institute of Silicate Chemistry Im. I. V. Grebenshchikov, Academy of Sciences SSSR
(Institut khimii silikatov Akademiya nauk SSSR)

TITLE: Liquefaction phenomena in the $\text{Li}_2\text{O}-\text{TiO}_2-\text{SiO}_2$ system

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 8, 1965, 1399-1402

TOPIC TAGS: lithium oxide, titanium oxide, silicon dioxide, phase diagram

ABSTRACT: In order to refine the position of the region of liquation on the phase diagrams of silicate systems, the $\text{Li}_2\text{O}-\text{TiO}_2-\text{SiO}_2$ system was studied as a typical example of a phase diagram in which the regions of macro- and microliquation need to be accurately defined. Samples prepared from Li_2CO_3 , TiO_2 , and SiO_2 were melted, annealed, and quenched, then their polished sections were examined under the microscope. Marked differences between the structures of the quenched samples made it possible to readily establish the boundary between the regions of macro- and microliquation, and the corresponding refined phase diagram was plotted (see Fig. 1). The region earlier thought to consist of two liquids is actually made up of two portions, and the region of ordinary liquation is bounded by an Li_2O content of 1 - 2% instead of the 20% indicated by the initial diagram. In the light of the establishment of the

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UDC: 541.123.3

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